

30

SEQ ID NO. 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
L	A	V	V	A	R	A	V	K	D	V	A	P	F	G	V	X	Y	D	T	K	T	L	G	N
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
N	L	G	G	Y	A	V	P	N	Q	L	G	L	L	D	G	G	X	D	W	T	M	I	X	K
51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
N	S	M	V	D	V	K																		

SEQ ID NO. 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
G	P	P	L	A	P	V	T	E	A	P	A	T	S	L	Y	T	I	P	F	H	H	G	A	A
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
X	V	L	D	V	X	S	S	X	L	L	W	X												

TOP SECRET 55T63360

SEQ ID NO. 3

AA :

MFKFKKKFLV GLTAAFMSSIS MFSATASAAG TDYWQNWTDG GGTVNAVNGS GGNYSVNWSN
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYVV DSWGTYRPTG
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFTQYWSVR QSKRPTGSNA AITFSNEVNA
WKSHGMNLGS NWAYQVLATE GYKSSGSSNV TVW

SEQ ID NO. 4

DNA :

1 ATGTTTAAGT TAAAAAGAA ATTCTTAGTT GGATTAACGG CAGCTTTCAT GAGTATCAGC
61 ATGTTTTTCGG CAACCGCCTC TGCAGCTGGC ACAGATTACT GGCAAAATTG GACTGACGGG
121 GCGGGGACAG TAAACGCAGT CAATGGCTCT GCGGGAATT ACAGTGTTAA TTGGTCTAAT
181 ACCGGGAATT TCGTTGTTGG TAAAGGCTGG ACTACAGGCT CGCCATTTAG AACAATAAAC
241 TATAATGCCG GTGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGCTGGACG
301 AGATCGCCCC TCATCGAATA TTATGTGGTG GATTCATGGG GTACTTACAG ACCTACCGGA
361 ACGTATAAAG GTACCGTAAA GAGTGATGGA GGTACATATG ACATATATAC AACGACACGT
421 TATAACGCAC CTTCATTGA TGGCGATAAC ACTACTTTTA CGCAGTACTG GAGTGTCCGC
481 CAGTCGAAGA GACCGACCGG AAGCAACGCT GCAATCACTT TCAGCAATCA TGTTAACGCA
541 TGGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ATCAAGTCTT AGCGACAGAA
601 GGATATAAAA GCAGCGGAAG TTCTAATGTA ACAGTGTGGT AA

TOTAL: 576556

SEQ ID NO. 5

Bacillus subtilis wild type xylanase :

AA :

MFKFKKQFLV GLSAALMSIS LFSATASAAS TDYWQNWTDG GGIVNAVNGS GGNYSVNWSN
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYVV DSWGTYRPTG
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDR TTFTQYWSVR QSKRPTGSNA TITFSNRVNA
WKSEGMNLGS NWAYQVMATE GYQSSGSSNV TVW

SEQ ID NO. 6

DNA :

1 ATGTTTAAGT TTA AAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAAATTG GACTGATGGG
121 GGCGGTATAG TAAACGCTGT CAATGGGTCT GCGCGGAATT ACAGTGTTAA TTGGTCTAAT
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGTTTGGACG
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT
421 TATAACGCAC CTTCCATIGA TGGCGATCGC ACTACTTTTA CGCAGTACTG GAGTGTTCCG
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT ACAATCACTT TCAGCAATCA TGTGAACGCA
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCAT GGCGACAGAA
601 GGATATCAAA GTAGTGGAAG TTCTAACGTA ACAGTGTGGT AA

0000155-100101
TOTOT-55T00000

Mutant XM1 :

SEQ ID NO. 7

AA :

MFKFKQNFV GLSAALMSIS LFSATASAAS TDYWQNWTDG GGTVNAVNGS GGNYSVNWSN
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYV DSWGTYRPTG
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDR TTFTQYWSVR QSKRPTGSNA AITFSNEVNA
WKSEGMNLGS NWAYQVLATE GYKSSGSSNV TVW

SEQ ID NO. 8

DNA :

1 ATGTTTAAGT TTAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GCCTAAATTG GACTGATGGG
121 GGCGGTACCG TAAACGCTGT CAATGGGTCT GCGGGGAATT ACAGTGTTAA TTGGTCTAAT
181 ACCGGAATTT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACCTTTATA TGGTTGGACG
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT
421 TATAACGCAC CTTCCATTGA TGGCGATCGC ACTACTTTTA CGCAGTACTG GAGTGTTCGC
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT GCTATCACTT TCAGCAATCA TGTGAACGCA
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCCT CGCGACAGAA
601 GGATATAAAA GTTCCGGAAG TTCTAACGTA ACAGTGTGGT AA

P0000155-100101

Mutant XM2 :

SEQ ID No. 9

AA :

MFKFKQNFLV GLSAAALMSIS LFSATASAAS TDYWQNWTIDG GGTVNAVNGS GGNYSVNWSN
 TGNFVVGKGW TTGSPERTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYVV DSWGTYRPTG
 TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFQYWSVR QSKRPTGSNA AITFSNHVNA
 WKSHGMNLGS NWAYQVLATE GYKSSGSSNV TVW

SEQ ID No. 10

DNA :

1 ATGTTTAAAGT TTAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAATTG GACTGATGGG
121 GGCGGTACCG TAAACGCTGT CAATGGGTCT GGCGGGAATT ACAGTGTAA TTGGTCTAAT
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC
241 TATAATGCCG GAGTTTGGGC GCCGAATGSC AATGGATATT TAACTTTATA TGGTTGGACC
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA
361 ACGTATAAAG GTACTGTAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT
421 TATAACGCAC CTTCCATTGA TGGCGATAAT ACTACTTTTA CGCAGTACTG GAGTGTTCGG
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT GCTATCACTT TCAGCAATCA TGTGAACGCA
541 TGGAAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCCT CGCGACAGAA
601 GGATATAAAA GTTCCGGAAG TTCTAACGTA ACAGTGTGGT AA

Mutant XM3 :

Seq ID No. 11

AA :

MFKEKKNFLV GLSAALMSIS LFSATASAAS TDYWQNWIDG GGTVNAVNGS GGNYSVNWSN
TGNFVVGKGW TTGSPFRTIN YNAGVWAPNG NGYLTLYGWT RSPLIEYYV DSWGTYRPTG
TYKGTVKSDG GTYDIYTTTR YNAPSIDGDN TTFTQYWSVR QSKRPTGSNA TITFSNHVNA
WKSHGMNLGS NWAYQVMATE GYQSSGSSNV TVW

Seq ID No. 12

DNA :

1 ATGTTTAAAGT TAAAAAGAA TTTCTTAGTT GGATTATCGG CAGCTTTAAT GAGTATTAGC
61 TTGTTTTTCGG CAACCGCCTC TGCAGCTAGC ACAGACTACT GGCAAAATTG GACTGATGGG
121 GGCGGTACCG TAAACGCTGT CAATGGGTCT GCGCGGAATT ACAGTGTAA TTGGTCTAAT
181 ACCGGAAATT TTGTTGTTGG TAAAGGTTGG ACTACAGGTT CGCCATTTAG GACGATAAAC
241 TATAATGCCG GAGTTTGGGC GCCGAATGGC AATGGATATT TAACTTTATA TGGTTGGACG
301 AGATCACCTC TCATAGAATA TTATGTAGTG GATTCATGGG GTACTTATAG ACCTACTGGA
361 ACGTATAAAG GTACTGTAAA AAGTGATGGG GGTACATATG ACATATATAC AACTACACGT
421 TATACGCAC CTTCCATTGA TGGCGATAAT ACTACTTTTA CGCAGTACTG GAGTGTTCGG
481 CAGTCGAAGA GACCAACCGG AAGCAACGCT ACAATCACTT TCAGCAATCA TGTGAACGCA
541 TGGAGAGCC ATGGAATGAA TCTGGGCAGT AATTGGGCTT ACCAAGTCAT GGCGACAGAA
601 GGATATCAAA GTAGTGAAG TTCTAACGTA ACAGTGTGGT AA

TGTGTTTTCGG

A CHAIN of inhibitor

Sequence source: Wheat flour xylanase inhibitor

N-terminal:

GAPVARAVEAVAPFGVCYDTKTLGNNLGGYAVPNV (35aa) SEQ ID NO. 13

C-terminal:

KRLGFSRLPHFTGCGGL (17aa) SEQ ID NO. 14

B CHAIN of inhibitor

Sequence source: Wheat flour xylanase inhibitor

N-terminal:

LPVPAPVTKDPATSLYTIPFH (21aa) SEQ ID NO. 15

Lys-C digested Chain B:

LLASLPRGSTGVAGLANGLALPAQVASAQK (31aa) SEQ ID NO. 16

GGSPAHYISARFIEVG DTRVPSVE (24aa) SEQ ID NO. 17

VNVGVLAACAPSK (13aa) SEQ ID NO. 18

VANRFLCLPTGGPGVAIFGGGPVWPQFTQSMPYTLVVVK SEQ ID NO. 19

TOTAL: 55169360